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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,184	10/01/2003	Carl L. Hammonds	HTS021/142827	7110

23444 7590 03/16/2007

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EXAMINER
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KOCZO JR, MICHAEL

ART UNIT	PAPER NUMBER
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3746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/676,184

Applicant(s)

HAMMONDS, CARL L.

Examiner

Michael Kocz, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-15 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10-01-2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application.
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: on page 7, line 14, "Tube tubular" is redundant.

Appropriate correction is required.

### *Claim Objections*

Claim 1 is objected to because of the following informalities: on page 15, line 11, "piston" should read --pistons--. In line 5 from the bottom, "clears" should read --closes--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 to 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Berrenberg (US 582,256), Herbsman et al (US 1,909,955) or Parks (US 1,774,662) in view of Nissels (US 4,773,305). Each of these references disclose a pump having first and second pistons and cylinders, and first and second valve assemblies. The pistons move in opposite directions. The pump drive is coupled to the first and second pistons and to the first and second

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valve assemblies. However, these references do not disclose pistons having tubular diaphragms. Nissels discloses a piston pump having a tubular diaphragm connected at one end to the cylinder, and at the other end to the piston with a piston cap 15. The tubular diaphragm ensures that no fluid can leak between the pumping chamber and the portion of the cylinder wherein the piston slides. This prevents contamination of the pumped fluid with piston lubricant, for example. In view of this teaching, it would have been obvious to provide the pistons of either of Berrenberg Herbsman et al or Parks with a tubular diaphragm.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Berrenberg (US 582,256), Herbsman et al (US 1,909,955) or Parks (US 1,774,662), as applied to claim 1 above, and further in view of Strohmeier (US 4,883,409). Each of Berrenberg, Herbsman et al or Parks disclose the invention substantially as claimed. However, these references do not disclose the drive means as being a two-direction (reversible) electric motor. Strohmeier et al disclose a pump having a screw drive connection between the piston and a reversible electric motor 36. The use of a screw drive allows finer control of the piston position and displacement for liquid metering as compared to the crank type drives of either of Berrenberg, Herbsman et al or Parks. In view of this teaching, it would have been obvious to substitute a screw drive connection between the piston and the drive means of either of Berrenberg, Herbsman et al or Parks, and to use a reversible electric motor as the drive means as taught by Strohmeier.

Claim 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Berrenberg (US 582,256), Herbsman et al (US 1,909,955) or Parks (US 1,774,662), as applied to claim 4 above, and further in view of Strempel (US 2,675,946). Each of Berrenberg, Herbsman

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et al or Parks disclose the invention substantially as claimed. However, these references do not disclose the drive means as being a unidirectional electric motor. Strempel discloses a pump piston driven by an unidirectional electric motor. Electric motors are more compact per power output as compared to other drive means. In view of this teaching, it would have been obvious to provide the pumps of either of Berrenberg, Herbsman et al or Parks with an unidirectional electric motor as the drive for the pistons.

#### ***Allowable Subject Matter***

Claims 7 to 15 are allowed.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry relating to patent applications in general should be directed to the Patent Assistance Center at 1-800-786-9199.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Koczo, Jr. whose telephone number is 571-272-4830. The examiner can normally be reached on M-Th; 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached at 571-272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Michael Koczo, Jr.', with a stylized flourish at the end.

Michael Koczo, Jr.  
Primary Examiner  
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